UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,557	01/06/2006	Robert A. Wills	13652.0001USW1	5059

23552 7590 09/23/2008

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER	
DRODGE, JOSEPH W	

ART UNIT	PAPER NUMBER
1797	

MAIL DATE	DELIVERY MODE
09/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,557	WILLS, ROBERT A.	
	Examiner	Art Unit	
	Joseph W. Drodge	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/11/2005, 10/8/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 11/247,949. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims and claims of co-pending '949 commonly recite common processes of drying solids initially wet with water within interstitial spaces, by exchanging a first solvent with the water followed by exchanging a 2nd solvent with the 1st solvent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 11-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 11-12, the method step c) of obtaining an ether product lacks nexus with steps 1 a) and b) of the claim that require selection of alcohol as 1st solvent and n-propyl bromide as 2nd solvent, instead of use of ether as comprised in the 1st or 2nd solvent. (Was it intended to employ each of alcohol, ether and n-propyl bromide as displacing solvents in claim 11?) .

In each of claims 12 and 14, antecedent basis is lacking for "***the step*** of obtaining an alcohol product that is at least 90% pure ***ethanol***".

In claims 13 and 14, it is unclear if the "obtaining" steps correspond to the "contacting" steps and it is also unclear if such "obtaining" concerns process steps that precede or alternatively, follow the "contacting steps".

In claim 15 and claims dependent therefrom, the nexus between providing of an ether source stream in part c) of claim 15 with the remainder of the claim is unclear, since only ethanol and then n-propyl bromide are utilized as displacing solvents in subsequent parts d) and e) of the claim; (Was a step of using "ether" as a displacing material intended for this claim?) .

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9, 10, optionally claims 11-14 and also claim 20 are rejected under 35 U.S.C. 102(b or e) as being anticipated by Teich et al patent 6,438,867. For claims 1,15 and 20, Teich et al disclose drying solids that are initially wet with water in the interstitial spaces between the solids, by displacing the water with a 1st exchanging solvent that is water-miscible with a heat of vaporization lower than water, such as alcohol, followed by displacing with a 2nd drying solvent having a lower heat of vaporization lower than the alcohol, such as ether (see especially column 3, lines 14-29 and 45-67; column 4, lines 25-35 and column 7, lines 25-30). Column 4, lines 27-33 clarify that the 1st exchanging solvent may be an alcohol. Column 4, lines 44-63 clarify that ethers are among the optional 2nd drying solvents that may be employed.

For dependent claims: for claim 2 and also for independent claim 20, Teich et al also disclose a subsequent heating step to remove residual fluids and solvents (column 7, lines 45-48); for claims 3,4 and 5, relative heats of vaporization and miscibility are inherent chemical, and physical material properties of the alcohol, ether and other solvents disclosed; for claims 6 and 7, Teich disclose use of methanol or ethanol (column 4, line 53); for claim 9, use of ether is found at column 4, lines 54 and 61-63 where environmental conditions permit; for claims 11-14, column 4, lines 27-33 clarifies that the 1st exchanging solvent may be an alcohol and column 4, lines 44-63 clarifies that ethers are among the optional 2nd drying solvents that may be employed, obtaining of pure alcohol as the solvent employed for the exchanging or drying solvent is inferred by column 4, lines 30-32 that states the water originally present may be exchanged wholly for alcohol rather than by an alcohol/water mixture as in column 5, lines 35-38..

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 8, and optionally claims 11 and 12, as well as claims 15-19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Teich et al patent 6,438,867 and if necessary, in view of DeGroot et al patent 7,053,036, Gray patent 6,743,300 and Ziegler et al patent 6,017,505.

Claim 8 and optionally claims 11 and 12, depending upon claim interpretation, as well as claims 15-19 differ in requiring the 2nd solvent to be n-propyl bromide. {For claims 15-19, again see detailed discussion of disclosure of Teich et al as applied to specifics of claim 1} DeGroot et al teach advantages of employing n-propyl bromide as a drying solvent of being non-flammable, non-corrosive and having a high evaporation rate thus ensuring rapid drying, and concerning drying of a wide range of substrates including miniaturized components that are porous with small cracks ,crevices and holes (column 6, lines 23-32 and column 7, lines 44-58). Similar varied applications are disclosed in Teich et al at column 8, lines 11-28.

Gray also teaches use of n-propyl bromide as a 2nd solvent employed in 2-step processes for cleaning and drying composite materials (column 1, lines 12-17; column 4, lines 44-60) and suggest that such 2nd solvent is among solvents that are readily recoverable (column 1, lines 41-45). It would have been obvious to one of ordinary skill in the art to have utilized n-propyl bromide as the (or one of the) 2nd drying solvent in the Teich et al process, due to it's advantages of being non-flammable, non-corrosive and having a high evaporation rate and/or due it's being readily recoverable.

These claims also appear to differ in requiring solvent recovery and recycling as relatively pure products. Gray teaches recovery of alcohol and bromide solvents employed in cleaning and drying processes (column 1, lines 41-45; column 2, lines 22-26; column 4, lines 41-60).

It is now noted that Teich et al concern drying of silica gels or other gels (column 3, lines 43-54). Ziegeler concerns drying of aerogels so as to replace water with alcohols and other water-miscible solvents and other solvent mixtures, followed by solvent recovery and re-cycling (column 1, lines 10-36 and column 4, lines 25-53 with column 6, lines 10-18 concerning recycling of alcohol solvent by distillation). It would have been also obvious to recover the solvents employed in Teich et al as taught by Gray and Ziegler, to facilitate continuous system processing on an industrial scale and for purposes of material conservation. Regarding percentage of purity of solvents recovered, Gray teaches that they are restored to "their starting compositions" (see column 2, line 26).

For claim 18, use of distillation to recover displacing/drying solvents is taught in Gray at column 5, lines 10-39.

For claims 17 and 19, one or more solvent extraction exchanging/drying solvent recovery steps is suggested in Gray at column 8, lines 29-45

Claims 13 and 14 are optionally rejected under 35 U.S.C. 103(a) as being unpatentable over Teich et al patent 6,438,867 in view of one or both of Ziegler et al patent 6,017,505 and/or Gray patent 6,743,300. These claims differ in requiring solvent recovery and recycling as relatively pure products. Gray teaches recovery of alcohol and bromide solvents employed in cleaning and drying processes (column 1, lines 41-45; column 2, lines 22-26; column 4, lines 41-60).

It is now noted that Teich et al concern drying of silica gels or other gels (column 3, lines 43-54). Ziegeler concerns drying of aerogels so as to replace water with alcohols and other water-miscible solvents and other solvent mixtures, followed by solvent recovery and re-cycling (column 1, lines 10-36 and column 4, lines 25-53 with column 6, lines 10-18 concerning recycling of alcohol solvent by distillation). It would have been also obvious to recover the solvents employed in Teich et al as taught by Gray and Ziegler, to facilitate continuous system processing on an industrial scale and for purposes of material conservation. Regarding percentage of purity of solvents recovered, Gray teaches that they are restored to "their starting compositions" (see column 2, line 26).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at his direct government telephone number of 571-272-1140. The examiner can normally be reached on Monday-Friday from approximately 8:30 AM to 12:30 PM and 2:00 PM to 6:00 PM.

Alternatively, to contact the examiner, send a communication via E-mail communication to the Examiner's Patent Office E-mail address: "Joseph.Drodge@uspto.gov". Such E-main communication should be in accordance with provisions of MPEP (Manual of Patent Examination Procedures) section 502.03 & related MPEP sections. E-mail communication must begin with a statement authorizing the E-mail communication and acknowledging that such communication is not secure and will be made of record, under Patent Internet Usage Policy Article 5. A suggested format for such authorization is as follows: "Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file.

Additionally, the examiner's supervisor, David Roy Sample, of Technology Center Unit 1797, can reached at 571-272-1376.

The formal facsimile phone number, for official, formal communications, for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD
9/19/2008
/Joseph W. Drodge/
Primary Examiner, Art Unit 1797